

THE STUDY OF MAN

THE STORK SURPRISES THE DEMOGRAPHERS

Where the Experts Erred—and Why

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THE public opinion pollers are not the only professional group of social scientists who have in recent years been exposed as false prophets. Although their mishaps have been less publicized than those of Mr. Gallup and his confreres, our population experts have seen their careful forecasts of the decline of American population dramatically upset by a sudden rise in the birth rate following years of declining fertility. To the consternation of the experts, Canada, Australia, and New Zealand, and even the war-ravaged nations of Europe, have shown the same sharp upward trend, and the self-criticism evoked in the ranks of demographers has been even sharper than that of the opinion pollsters after the 1948 fiasco. At the present time, most American demographers are engaged in re-examining and reformulating their

AMERICA had led the world in the growth of its population so long that it was saddening to discover, in the 1920's and 1930's, that our population was advancing at the more measured rate typical of the countries of Western Europe. On the basis of that trend demographers predicted a continuing decline, bad news indeed since it presaged a contracting domestic market and a nation that would have a hard time filling its armies. Suddenly in the last ten years, the birth rate has bounded up again, confounding the prophets. DENNIS H. WRONG here discusses why the population experts went off the track. Mr. Wrong has taught sociology at New York University, Princeton, and Rutgers, and was until recently on the staff of George Kennan (now Ambassador to Russia) at the Institute for Advanced Study, doing research on problems of population and natural resources.

long-standing assumptions about the broad course of population growth, as well as the technical methods used by them in past predictions. As the April 1949 issue of *Population Index* sadly noted: "Until recently the course of population development in Western nations was generally believed to be well charted and understood. This is now a matter of some doubt."

What happened to refute the demographers' confident predictions? The preliminary reports of the 1950 census show that during the 1940's the population of the United States increased from 131,700,000 to 150,700,000, the largest increase between censuses in the history of the nation, and over twice the increase in the previous decade; the percentage rate of increase in the decade was 14.5 as against 7.2 in the 1930's; the number of children under ten increased by 44 per cent; and the birth rate rose to the highest level since 1915. A brief review of the history of population growth in the Western world will indicate more fully the significance of these reversals of trend.

THE standard theory about population growth in the context of which predictions have been made is best presented in the work of Warren Thompson and Frank W. Notestein, two of the country's leading demographers. Their useful conception of a "demographic cycle" (see Notestein's essay "Population—The Long View," in *Food for the World*, edited by Theodore Schultz, 1944, and Thompson's *Plenty of People*, 1944) describes—and predicts—the curve of population growth that is followed by nations making the transition

from an agricultural-handicraft economy to urbanism and industrialism. Pre-industrial societies, according to this scheme, are in the phase of "high growth potential"—that is, their birth rates are high, but are balanced by equally high death rates, so their populations tend to remain fairly stable. Very low life expectancy causes a concentration of the population in the younger age groups. In India, for example, a nation which is still in this phase of the demographic cycle, the ratio of children under five to adults over sixty-five is 7 to 1, while in the United States it is almost 1 to 1. These are the true "Malthusian" populations, in which growth or its absence is determined primarily by the limits of the available food supply. Europe was in this phase of "high growth potential" before 1650, and the Near East, India, China, Southeast Asia, non-white Africa, and most Latin American nations are still at this stage today.

The demographic stability of these technologically backward societies is abruptly disturbed when political pacification, greater agricultural productivity, better means of transportation, more adequate diets, public health and sanitation measures, modern medical care, and other benefits of modernization lower the death rate. Since the high birth rate is not at first affected, or only very slightly, a period of "transitional growth," in which the population increases rapidly, ensues. The death rate falls at a much faster rate than the birth rate, and the population grows rapidly for several generations. Between 1790 and 1860, when the United States was in this phase of the population cycle, its population doubled on an average of once every 23.5 years—a source of wondering admiration to De Tocqueville and of gloomy foreboding to Malthus. Today the Soviet Union, Southeastern Europe, Japan, Argentina, and Brazil are in the phase of "transitional growth," and their populations will very probably begin to level off in the next half-century.

ON THE heels of this first demographic revolution—the reduction of mortality and the huge population growth it releases—there has followed a second: a huge decline in the fertility of mature industrial civilizations. Students of population at one time had a tendency to attribute the lowered birth rate of the industrialized West to the supposedly debilitating effects of the "fast tempo of modern life" on

the "reproductive energies of the race"—Herbert Spencer was the most prominent figure to favor this view. Such biological explanations, however, are no longer given much credence, for it has become increasingly obvious that the declining birth rate is the result of a deliberate decision on the part of parents to restrict the size of their families.

The important question then became, why do people in modern society tend to want smaller families?

The invention and diffusion of effective contraceptive devices make the limitation of family size possible, but it is the replacement of an agricultural subsistence economy by a market economy in which the welfare of the family depends on an earned cash income that seems to motivate the trend to fewer children. For the expense of bearing and rearing children now competes with other demands on the family budget. And with the decline of the family farm, the legal banning of child labor, and the passage of compulsory school attendance legislation, children are no longer an economic asset. Also, urban living has made it more difficult to accommodate large families in cramped living quarters.

However, if these were the only causes of the decline in the birth rate, one would expect low-income families to be the first to practice birth control: yet it is the wealthier families who have everywhere pioneered in "planned parenthood." This is even true of the cities of the ancient world where the upper classes practiced infanticide (especially female) to rid themselves of unwanted offspring. Evidently more than mere economic hardship is involved: there is the desire to maintain a standard of living well above the subsistence level; the inclination to regard as necessities one-time luxury goods and services, such as plumbing or automobiles; the requirements of Veblen's "canons of conspicuous consumption"; the pursuit of interests and ambitions centered outside the family group; the wish to cultivate the social and sexual pleasures of married life for their own sake; the desire of women to free themselves from the drudgery of bearing and rearing children. But there are undoubtedly more subtle alterations of motive and attitude which underlie the momentous shift from a birth rate determined by the vagaries of nature to one which is consciously planned and controlled by human purpose. The fundamental emotions of human

beings towards sex, marriage, and parenthood are implicated. No doubt, the insufficient attention paid by most demographers to such deeper psychological factors contributed to the failure of contemporary forecasts.

With declining fertility another radical change takes place: the middle and older age groups become proportionately larger as the fewer infants born each year are insufficiently numerous to replace their parents. The most summary comparison of backward and long-industrialized areas tells the story: in the Near East 40 per cent of the population are under fifteen ("children"), and 54 per cent are between fifteen and fifty-nine ("adults"), as compared to the corresponding percentages in each group for Northwestern and Central Europe of 24 and 62. But whereas in the Near East "old people" (over sixty) number 6 per cent, this group amounts to 14 per cent in these European countries.

Aging populations can continue to grow for a time, but only because the high percentage of adults provide a large stock of potential parents whose children will make up in over-all number for the decline in the size of each individual family. However, as the last survivors of the age of large families approach the limits of life expectancy, the death rate will rise to a level equal to or surpassing the birth rate, unless the trend is reversed by a return to larger families. Thus the cycle will be completed: from a stationary population with a high birth rate and a high death rate, to a stationary population with a low birth rate and a low death rate.

Eventual stability or actual decline appears, therefore, to be inherent in the unstable age structure of advanced industrial societies, which is why Notestein characterizes them as populations in the phase of "incipient decline." It was this phase, all competent demographers agreed, that the United States had reached in the 1930's; the total population might rise for a few more decades, but the rapidly increasing proportion of the old would ensure an absolute fall beginning in the not too distant future.

IT WAS against the background of rapidly falling birth rates and restricted immigration that Warren Thompson and P. K. Whelpton of the Scripps Foundation in 1933 presented estimates of the future population of the United States to President Hoover's Research

Committee on Social Trends. This was the first time that the forecasts of demographers had been given an official, state-sanctioned status. From that time on, estimates of future populations, or projections as they are technically called, were to serve as the essential foundation for the long-range planning that, in the same year, became an important feature of American life.

Most of these estimates were worked out by Thompson and Whelpton. The method they employ is the most widely accepted of several which have been devised by demographers. It is based on concrete assumptions about the actual factors determining population growth—births, deaths, and migration—rather than on mathematical formulae or extrapolated curves, which had been favored by population students ever since Malthus advanced his theory of the geometric progression of population. Thompson and Whelpton start by analyzing the birth rates and death rates of each age group in the population. They then project these rates a specified number of years ahead and, after making allowances for probable future migration, they can calculate what the future size and age composition of the population will be, if birth and death rates do not change. Since birth and death rates have in fact been constantly changing in all regions except those which are untouched by industrialization, it is necessary to make additional assumptions about the rate and direction of future changes. There are always several alternative possibilities, so Thompson and Whelpton habitually make various estimates of the future population, each one based on a different combination of assumptions about future levels of fertility, mortality, and migration. Under the influence of the prevailing demographic viewpoint, which saw America entering the stage of "incipient decline," they have in the past regarded those projections which assumed that there would be "medium" fertility, "low" mortality, and no annual net immigration as the most likely to be realized, and it is these which the Census Bureau has invariably selected for its official forecasts.

Up until 1940, nothing happened to seriously challenge these forecasts. The 1940 census contained no surprises. But all of a sudden reality began to break through the curves that had been fitted to it. Every year projections were revised upward; but even so, they never caught up with the actual figure of

the 1950 census. As a vigorous critic of population forecasting, Joseph S. Davis, wrote in 1949 (*The Population Upsurge in the United States*, Food Research Institute, Stanford University): "Nearly all the favored projections from 1938 through early 1949, so far as users can interpret them, will be below the actuality in 1950 by something like one million for every year between the date of publication and the target date!"

IT IS quite clear in retrospect where the forecasts went wrong. In the depression decade the rate of increase of the American population was the lowest ever recorded, and the absolute increase of under eight million was the lowest since the Civil War. It seemed clear that the United States was now well into the phase of "incipient decline," and that absolute decline was imminent. The population forecasts made in the middle and late 30's anticipated continued slowing up of growth in the 40's and 50's and a peak in numbers by 1980. Demographers both shared and contributed to the pessimistic outlook of the period, and wrote somber essays on the social consequences of an aging and declining population which sounded most disheartening to a nation accustomed to stressing its youthfulness. In view of the current alarm about the pressure of populations on the food supply (see Morton Clurman, "Will Births Outstrip Mankind's Resources?" COMMENTARY, March 1952), it may sound odd to characterize forecasts of declining population growth as pessimistic, but it should be remembered that the depression caused widespread fears that the American economy had reached the limits of its expansion, and one school of economists, the "secular stagnationists," regarded the decline of population growth as a major factor restricting investment opportunities.

But as the nation recovered from the depression, the birth rate began to climb and in the early years of the war it shot up until in 1943 it was higher than in any year since 1926. Demographers still persisted in believing that the long-run trend was downward, and they found very plausible explanations for the presumed short-run disparity. Economic hardship, they maintained, had caused many people to postpone getting married and having children during the depression, and this "backlog" was carried over and released in the late 30's and early 40's. But once the unborn babies of

the depression period had finally been born in the early 40's, fertility would resume its decline because analysis revealed that the rise in the birth rate did not reflect an increase in the average size of the family. The "war babies" were nearly all first or second children. Couples who already had several children were not induced by prosperity to have more. The birth rate rose only because previously childless women had their first children, and more women married, married younger, and gave birth to their first child earlier, than had been the case in the 1930's or even in the 1920's.

IN 1944 and 1945 the birth rate fell a little and demographers were convinced that the long-range trend was reestablishing itself. But then, as soon as the war was over, the birth rate soared again, and in 1947 nearly four million babies were born, the largest number ever born in a single year in the history of the nation. However, there was still no visible evidence of a trend towards larger families. Demographers patiently explained that this time it was births that would "normally" have occurred in the 1950's which had been "borrowed" by the late 1940's as a result of the exceptional prosperity of the postwar years. It was still a high marriage rate and earlier ventures into both matrimony and parenthood which accounted for the increase in births. Demographers reasoned that there was a natural limit to this matter of marrying at progressively earlier ages; and while women might continue to bear their two or three children earlier in life than their mothers had, their contribution to the birth rate would be ended once these children had been born. Without an increase in the number of children per family, of which there was no sign, the birth rate would eventually have to fall to a lower level. A decisive decline was predicted for the early 1950's.

Then more babies were born in 1951 than in 1947, the previous record year, and the flood of births showed no sign of abating in the first half of 1952. Most significant of all, there are some indications that a trend towards slightly larger families has finally emerged in the past two years. No longer can demographers speak of births "borrowed" from the future, for with marriages falling off sharply in 1951 and early 1952, the addition of new children to two- and three-child families has helped keep the birth rate at a high level.

If this trend towards slightly larger families continues and spreads, it is altogether possible that the American population will go on growing for the next half century or longer, and the all-time peak in numbers which demographers have for so long been claiming to be just around the corner will be postponed until the remote future.

Nevertheless, slightly larger families—an average of three or four children per family instead of two, for instance—would not mean that there has been any departure from voluntary parenthood. A reversal of the historic transition from unrestricted fertility to birth control is most unlikely in the modern world, so the significance of a slight increase in family size should not be exaggerated. There has been no third demographic revolution—at least not yet.

At present one can only speculate about the causes of the new upturn—for even the basic statistical data are not yet available. There have been signs of a revival of positive attitudes toward the family in the urban middle class; perhaps the growing popularity of psychiatry, and the derogation of the values of work and success in favor of those associated with leisure and security, which has been noted by social psychologists like David Riesman, has created a new preference for larger families. Possibly the pervasive anxiety of the age has produced a compulsive retreat to the “fundamentals” of parenthood and domesticity. However, it is doubtful that these motivations could withstand the impact of another economic depression or of too steep an inflationary spiral; people may wish to have more children because of psychological insecurity, but they will certainly restrain their desires for a larger brood if economic insecurity threatens them as well.

AT A time when military planners anxiously scan census tables and population projections to discover how many young men will be available for military service in five, fifteen, and twenty-five years, and when economists, already shaken by their own postwar failures in prediction, scan the same figures to discern the size of future markets and labor forces, it becomes a matter of more than academic interest to determine just why it was that the census projections were so far off.

The historical events which seem to have affected the birth rate and confounded the demographers were, in their order of occur-

rence: The severity of the depression, the pre-Pearl Harbor defense boom, World War II, postwar prosperity and its continuation as a result of the European aid program, and the partial mobilization required by the cold war with the Soviet Union. Now no one could justifiably expect even a Nostradamus to predict successfully all of these things, let alone their precise impact on fertility. Demographers, indeed, have repeatedly stated that their forecasts are not intended to be *predictions* of the future population at all, but are simply *projections* of what it will be *if and only if* (as logicians like to say) certain trends continue to operate. But Harold Dorn, in a brilliant article in the *Journal of the American Statistical Association* (“Pitfalls in Population Forecasts and Projections,” Volume 45), charges the demographers with false modesty for disclaiming in this manner the predictive intent of their projections, pointing out that government agencies and businessmen have based their planning on the Census Bureau forecasts without ever having been cautioned by the demographers about their limitations.

In retrospect, we must say the demographers are chiefly guilty of having become too entranced with their tables and statistical manipulations, and of underestimating the novelty, disorder, and above all, the weight of conscious choice and other subjective factors, in human life. The knowledge that until the late 30's the birth rate had been steadily declining, and that planned families are everywhere smaller than unplanned ones, impressed them to such an extent that they failed to realize that there was no inherent reason why under improving economic conditions more people might not decide to have children—and young couples might not decide to have slightly larger families than their parents had. Voluntary control of births, after all, implies precisely a greater freedom of decision, and this includes the freedom to reverse previous trends. The demographers stressed instead the age composition of the population, which had been distorted by the long decline in births, and they became convinced that the continued slowing up of population growth and eventual depopulation was “inherent” in the age structure. They ignored the possibility of a sharp rise in fertility because they did not consider such a rise to be in any way possible. In light of the almost cosmic uncertainty of life in the 20th century, it is easy to sympathize with their plight.

THEY have learned their lesson. In 1930 O. E. Baker wrote that "the population of the United States, ten, twenty, even fifty years hence, can be predicted with a greater degree of accuracy than any other economic or social fact, provided the immigration laws are not changed." In 1952, Irene Taeuber wrote in a symposium on population and resources problems (*World Population and Future Resources*, edited by Paul K. Hatt, American Book Company, 1952): "The answer to 'What will happen?' or even to 'What is probable?' is not to be found in the formal manipulation of population statistics. Birth and death rates are variable, their levels and their trends at once products and causes of those physical, economic, social, political, and psychological factors that in interaction determine status and development. The problem of the future of population growth is the problem of the future of the culture."

The most recent official population forecasts (Bureau of the Census, *Current Population Reports*, Population Estimates, Series P-25, No. 43, August 10, 1950) reveal even more strikingly the changed outlook of American demographers. They differ from earlier forecasts in four major respects:

(1) The population is projected only eleven years ahead, to 1960, whereas in previous forecasts it was projected fifty years into the future and sometimes even further.

(2) The estimates for 1960 vary from 161 to 180 million—a range of close to 20 million! In all of the earlier forecasts the range between the highest and lowest figures for a ten-year projection was less than 5 million. The forecasters, Jacob Siegel and Helen White of the Census Bureau, write: "Although the range indicated by the population projections may appear rather wide, such a range is now recognized as desirable by many leading demographers; and it is believed a narrower range would give a misleading impression of the predictability of the future population from present knowledge."

(3) Instead of selecting a "preferred" series from the three presented, as had previously been the custom, Siegel and White expressly warn users of the projections not to regard the "medium" series as the closest to an actual prediction of the future population, and no series is assumed to be more probable than any other.

(4) Acutely aware of the recently demon-

strated difficulties in forecasting future fertility, Siegel and White indicate which of the projected age-sex groups in the population depend on assumptions about the future birth rate and which depend only on the survival of age-sex groups which were already born in 1949 with deductions made for probable deaths. All of the projections of the total future population must, of course, rest on hazardous estimates of future births.

BERTRAND RUSSELL has recently suggested that the habit of planned parenthood, rather than free enterprise or parliamentary government, is perhaps the most valuable contribution which the culture of the West can make to the rest of the world. It introduces, however, a startling element of unpredictability into our society, of massive impact in many areas. It is surely an amazing thing that the wealthiest and most powerful nation in the world cannot predict for even ten years ahead what the size of its own population will be within a margin for error of less than twenty million. In effect, population growth is no longer an independent variable determined by the age composition of the population and stable trends in fertility and mortality; it has become instead closely dependent on economic conditions, world affairs, and cultural factors, waxing and waning as the birth rate responds positively and negatively to successive booms, depressions, and wars.

Let us glance at the new problems created by these fluctuations in the annual number of births. At the present time, for instance, we are feeling the effects of a dearth of teen-agers because it is the depression-born generation which is now coming of age. The number of new workers entering the labor force and of youths reaching military age is considerably lower than in 1940, when the babies born in the prosperous 20's were approaching adulthood. The result is that our industrial and military manpower situation is far tighter (nor do we have a "cushion" of eight million unemployed to fall back on). The Pentagon is responding to this by adopting less rigid standards of physical fitness for the armed forces. All-out mobilization would today require the imposition of stricter manpower controls at an earlier stage in the war effort than was necessary last time, and greater reliance would have to be placed on older people as labor reserves. Our manpower outlook, however, is only tem-

porarily unfavorable; when the infants of the 40's come of age in the 60's we will have large annual quotas of teen-agers entering the labor force and reaching draft age. Doubtless the Russians are well aware of this.

A zigzag curve of population growth also poses a huge problem for our school system. The elementary schools are at present crowded with the children born in the war and postwar years; there is a serious shortage of qualified teachers, and many new school buildings have had to be built. On the other hand, the low birth rate of the 30's has reduced the number of high school and college enrollments. This will of course change when the children now in elementary school are ready to enter high school and then college, but it is not much consolation to the young college instructor who is laid off today to know that he has only to wait another five years or so for his services to be in demand again. And if the birth rate should fall, we may find ourselves oversupplied with elementary school facilities. The uncertainty of all predictions of future births makes it exceedingly difficult for boards of education to engage in long-range planning.

Parenthetically, there is no more basic element involved in planning physical facilities of all kinds—not only schools, but hospitals, health centers, transit facilities, streets and sewers, and so on—than the size of population, and if we cannot predict this within any reasonable range for even ten years ahead, what happens to the possibility of planning? Certainly we cannot do without foresight in arranging our affairs. But people, it seems, are less predictable than we thought, and foresight will not get us as far as we fondly thought it would.

Warren Thompson writes in *Population Problems* (Third Edition, McGraw-Hill, 1942), the most widely used text in college courses on population, that "the birth rate of a country is greatly depressed during a war." He cites as evidence the fact that there was a clear-cut decline in the rate of population increase in every war decade in American history (with the exception of the decade in which the small-scale Spanish-American War was fought), and that the birth rate in European countries fell to a new low during World War I. However, in World War II even those European nations that suffered most severely from the war experienced higher birth rates during the war

and afterwards. It is evident that Thompson's generalizations no longer hold.

The difference is that modern war is total war, requiring the complete mobilization of a nation's human and physical resources and thus guaranteeing for the duration a measure of economic security. World War II, of course, followed a period of prolonged depression; perhaps a third war preceded instead by the rising living standards of a rearmament boom might not have the same effect on fertility. Some demographers have claimed that World War II brought a rise in the birth rate only because it followed the "abnormal" conditions of the depression, but in a world like ours it is difficult, to say the least, to decide what "normal" conditions are. Each generation tends to face a historically unique situation which may influence marriage and birth rates in quite unforeseeable ways. What effect will the maintenance of a partially mobilized war economy and a large standing army, both unique facts in American history, have on population growth? No one quite knows.

THE contemporary upswing in the birth rate has alarmed neo-Malthusians like William Vogt and Fairfield Osborn, who are concerned about the adequacy of American food resources to satisfy the requirements of a still growing population. But they seem to me to have missed the fundamental point about the recent upsurge: its voluntary character, and its association with a high level of prosperity. For if people respond to even slight business recessions (as was the case in 1949) by restricting births, how much more will they respond if standards of living are threatened by an unfavorable population-food ratio.

This great variability in our birth rate does create problems for us: but they are, as we have indicated, such problems as deciding what kinds of facilities we need for babies, children, and young people, when these groups may, in a relatively short time, increase to twice their numbers—or drop to half. Our population growth no longer confronts us with the Malthusian problem of the blind pressure of people on resources: we rather have the quite unique problem of planning for a variable population that is the product of many individual acts of choice, in response to each specific historical situation.